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CERAMICS

HINTS TO CHINA PAINTERS.

XVIII.—FIRING.

THOUGH a very important part of the decoration of porcelain, the one, indeed, which crowns the work with success or dooms it to failure, firing is not the occult process it is supposed to be by the uninitiated. The idea of causing the dainty piece of china, upon which many hours of labor have been bestowed, to endure a temperature which is raised to white heat is somewhat alarming to the novice, but if properly managed, the most delicate painting will come from this intense heat not injured but beautified.

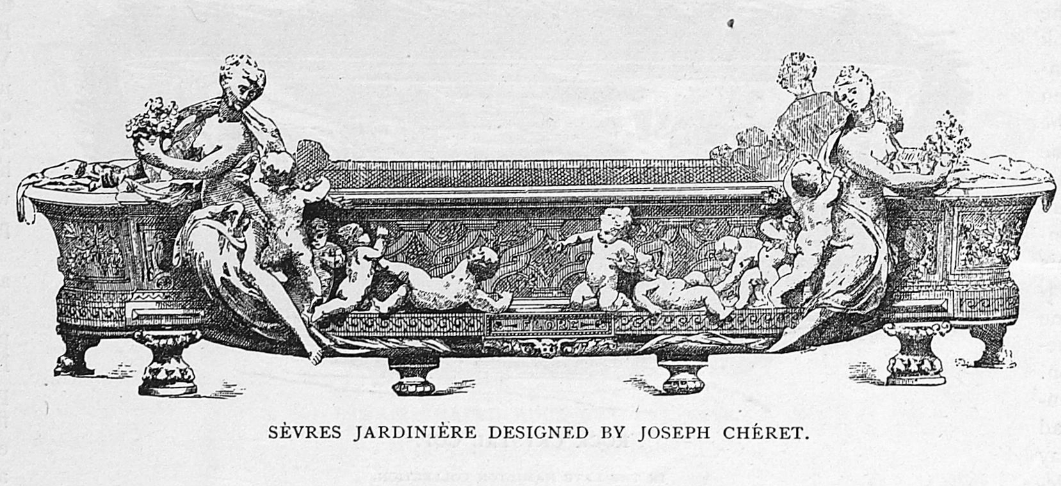
In every large city there are decorators who fire the work of amateurs, but the introduction of portable kilns now renders it possible for them to do this part of the work at home with little trouble and with much less expense than is incurred in having it done by the professional firer. These kilns also make the execution of the best work practicable by enabling the artist to give his pieces the exact degree of heat demanded by the particular style of work. They are also very easily managed. The one in most general use consists of an iron pot with a cover in which the china is placed, and around which, between it and an outside wall of fire clay tiles, is a space of three or four inches to contain the fuel. The pot as well as the cover is provided with a vent from which a short iron pipe proceeds. The whole apparatus is elevated upon three feet. The fuel used is charcoal.

These kilns can be procured of various sizes to suit the needs of decorators. The size which it is best for an amateur to use depends upon the amount and kind of work which is to be fired in it. A small kiln is more economical in the matter of fuel, but on the other hand will not hold pieces of any considerable dimensions, and there is danger of the breakage of pieces which are disproportionately large. A kiln of the smallest size can be fired with twenty cents' worth of charcoal, while one of a capacity of twelve by sixteen inches will require twice as much fuel. A shelf is provided for use when a number of small articles are to be fired; this allows twice as many pieces to be well placed. The kiln should be placed out of doors in as sheltered a situation as possible. The fumes of the charcoal would be too oppressive in a room or cellar. It can, however, be used upon a porch by taking the necessary precautions against fire. A piece of sheet iron should be laid upon the floor beneath it, and the kiln should also be raised by placing the feet upon bricks. A round sheet-iron pan can be procured of such dimension that it can be slipped under the kiln between the feet. This should also be set upon bricks. Into this pan the coals can be allowed to fall, when, a sufficient degree of heat having been attained, a slide at the bottom of the kiln, arranged for this purpose, is drawn. It would be more convenient to have such a pan underneath the kiln to receive the coals in any case. These kilns are easily set up according to directions given by the makers.

Before beginning to set the pieces to be fired in the kiln, it is better to have some charcoal ignited, for the purpose of starting the fire. This is done by placing a few pieces of charcoal with some kindling and red coals in the perforated iron basket which comes with the kiln. By the time the pieces are placed in the kiln the coals will generally be ignited to a sufficient degree to start the fire. The pieces of china should be placed upon fire clay stilts, and in arranging them in the kiln care should be taken that they do not touch each other. The stilts should also be so placed that the points upon which the china rests do not come in any part of the piece where they can injure the painting.

DESIGN FOR AN OVAL PANEL.

Perfect stilts, those having sharp points, should always be chosen, as a stilt, the point of which has been broken, may come against some part of the painting where it will leave an unsightly spot. The position of the article is immaterial, that is, it may be placed sidewise or upside down if convenience so dictate, but it must rest so firmly upon the stilt by which it is supported that any slight jarring of the kiln, which might easily occur in putting in the fuel, will not cause it to slip out of place and perhaps against another piece. If the article is a large one it should be placed as near the centre of the kiln as possible so as to receive the heat evenly, and there must not be too heavy a weight placed on top of it. One piece may be placed upon another, only with this caution, that heavy pieces should not be placed upon light ones or any weight upon a large piece. With large pieces the danger of firing in a small kiln is greatly increased, as the intense heat is attained so quickly that the piece is liable to be broken unless great care is exercised.



SÈVRES JARDINIÈRE DESIGNED BY JOSEPH CHÉRET.

The pieces being properly arranged, the cover is replaced upon the iron pot and the vent-holes are closed with wads of paper to prevent dust from getting inside during the process of putting in the fuel. The kiln is now ready for the fire, and the coals, which have been ignited in the iron basket, are now to be distributed evenly around and upon the top of the pot and the kiln is then filled with charcoal which should also be heaped upon the top. The paper wads must now be removed from the vent-holes. In from one half to three-quarters of an hour the kiln will be heated to the greatest possible degree. The length of time in which this temperature is attained will vary according to the quantity of ignited coals which have been used to kindle the fire and the state of the atmosphere. It is better to have the fire kindle slowly so that the china may be gradually tempered to endure the heat. This caution should be especially observed if large pieces are to be fired, and for this reason in any case it is better to avoid firing on a windy day, as the wind fans the coals and ignites them so quickly that the fire is brought to a very high temperature too suddenly. A rainy day should also be avoided unless the kiln is so placed as to be sheltered from drops of rain. The least moisture penetrating the kiln will injure the glaze.

The temperature may be observed by looking into the vent-holes. When heated to the highest degree the china will be visible inside, appearing of an intense whiteness relieved against the red-hot iron. When this point has been reached the slide may be drawn and the red coals dropped into the pan, and the kiln allowed to cool. When there is plenty of time it will do no harm to let the coals remain in the kiln and gradually burn out, that is if the articles fired are of such a character as to demand the highest degree of heat, as no higher temperature than that indicated by the appearance described will be reached. Letting the fire burn out of itself is a good practice in very cold weather, as it insures a very gradual cooling of the kiln. In firing certain kinds of decoration, especially that of relief colors or certain of the more fusible pigments, it may be desirable to stop the fire before it has reached the highest temperature; but for gold, especially when a dead surface without burnishing is desired, the highest degree of heat is requisite. A high temperature in firing also insures a fine glaze to all colors which will bear it.

The time required for the kiln to cool sufficiently to permit its being opened will depend upon the temperature of the air and upon the size of the kiln. To prevent scaling of the colors it is better to allow the pieces to remain in the kiln until they are sufficiently cool to permit their being held in the hands while they are removed. The kiln should never be opened in less than an hour or so after the fire has been stopped, as a current of cold air upon the heated china will cause it to break. For fear of accidents it is better to moderate the impatient desire to see the contents of the kiln and to refrain from opening until it is perfectly certain that they have cooled sufficiently to permit their removal without injury. When taken out, articles fired according to the directions here given will be found to have a very brilliant glaze. The surfaces will be slightly rough on coming from the kiln, but this roughness can be entirely removed by rubbing with emery paper.

M. LOUISE MCLAUGHLIN.

M. JOSEPH CHÉRET has for the third time won the Sèvres prize with his design, illustrated herewith, for a low jardinière suitable for the middle of a dining table. A similar design by M. Louis Carrier-Belleuse received honorable mention.